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NCERT Class 6 Solutions: Knowing Your Numbers (Chapter 1) Exercise 1.3 – Part 1

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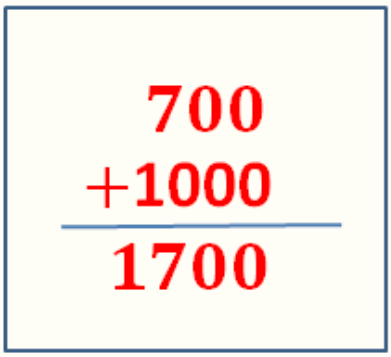
Q-1 Estimate each of the following using general rule:

1. $730 + 998$
2. $796 - 314$
3. $12,904 + 2,888$
4. $28,292 - 21,496$

Solution:

1. $730 + 998$

- By rounding off to hundreds
- 730 rounds off to 700 and 998 rounds off to 1000.
- Estimate sum is 1700



1. $796 - 314$

2. By rounding off to hundreds

3. 796 round off to 800 and 314 round off to 300

4. Estimate difference is 500

$$\begin{array}{r} 800 \\ -300 \\ \hline 500 \end{array}$$

1. $12,904 + 2,888$

2. By rounding off two nearest thousands

3. 12904 round off to 13000 and 2888 round off to 3000.

4. Estimate sum is 16000

$$\begin{array}{r} 13000 \\ +\ 3000 \\ \hline 16000 \end{array}$$

1. $28,292 - 21,496$

2. By rounding off to nearest thousands

3. 28292 rounds off to 28000 and 21496 rounds off to 21000.

4. Estimate diffrence is 7000

$$\begin{array}{r} 28000 \\ -\ 21000 \\ \hline 7000 \end{array}$$

Q-2 Give a rough estimate (by rounding numbers off to nearest hundreds before calculation) and also a closer estimate (by rounding off to nearest tens) :

1. $439 + 334 + 4317$
2. $1,08,737 - 47,599$
3. $8325 - 491$
4. $4,89,348 - 48,365$

How to Round Numbers

Decide which is the last digit to keep, for example when off to rounding to hundreds the units and tens digit will become zero and the hundreds digit will be kept. So we will be working on the hundreds digits

Leave it the same if the next digit is less than 5 (this is called rounding down)

Increase it by 1 if the next digit is 5 or more (this is called rounding up)

Example 1: To round 764 to the nearest 100

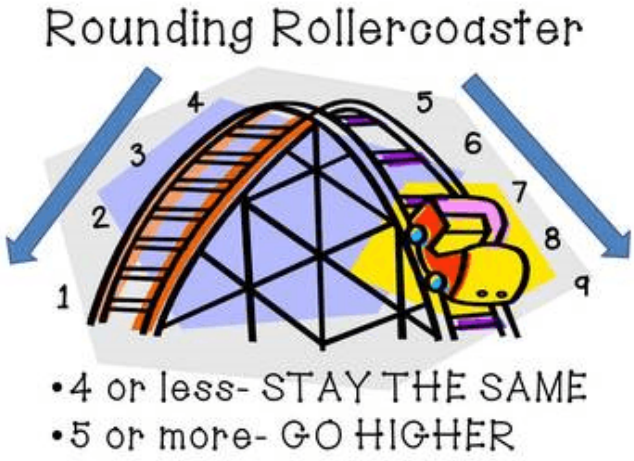
- We look at the digit right after the hundred's digit
- Since it is 6 the 7 in the hundreds place is changed to 8 and the answer becomes 800.

Example 2: Round 86 to the nearest 10

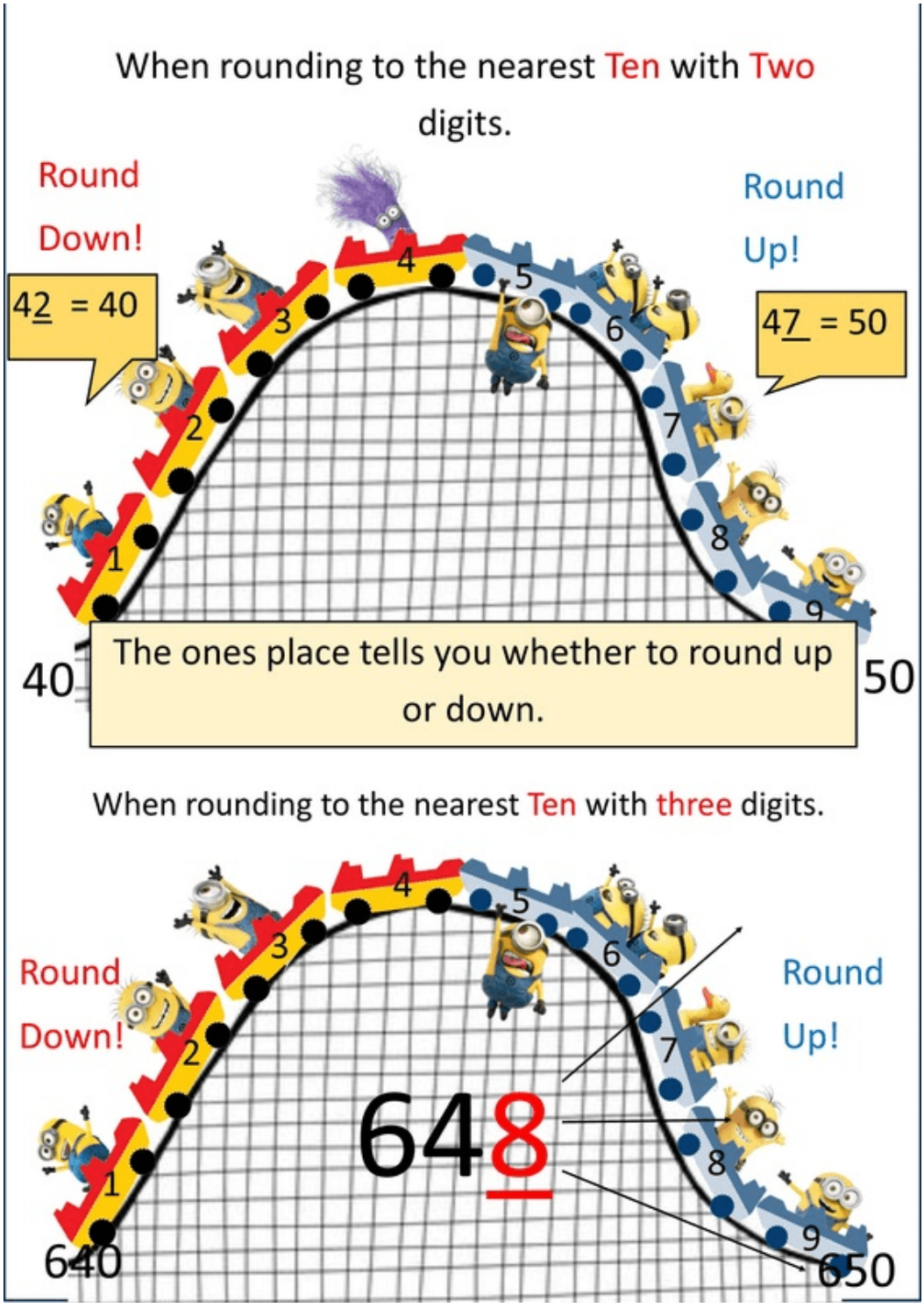
- We want to keep the "8"
- The next digit is "6" which is 5 or more, so increase the "8" by 1 to "9"

Answer: 90. We say that 86 gets "rounded up"

Rounding can be understood with a roller coaster:



Here are 2 examples:


When rounding to the nearest Ten with Two digits.
Round Down!
Round Up!
42 = 40
47 = 50
40
50
The ones place tells you whether to round up or down.
When rounding to the nearest Ten with three digits.
Round Down!
Round Up!
648
640
650

Solution:

1. $439 + 334 + 4317$

2. By rounding off to **nearest hundreds**

3. 4$\underline{3}$9 rounds off to 400,3$\underline{3}$4 rounds off to 300 and 43$\underline{1}$7 rounds off to 4300

4. The digit we need to look at to decide the value of hundreds digit is underlined

$$\begin{array}{r} 400 \\ 300 \\ +\ 4300 \\ \hline 5000 \end{array}$$

- By rounding off to **nearest tens**
- 43$\underline{9}$ rounds off 440,33$\underline{4}$ rounds off 330 and 431$\underline{7}$ rounds off 4320
- The digit we need to look at to decide the value of tens digit is underlined

$$\begin{array}{r} 440 \\ 330 \\ +\ 4320 \\ \hline 5090 \end{array}$$

1. $1,08,737 - 47,599$

2. By rounding off to **nearest hundreds**

3. 108737 rounds off 108700,47599 rounds off 47600

4. The digit we need to look at to decide the value of hundreds digit is underlined

$$\begin{array}{r} 108700 \\ -\ 47600 \\ \hline 61100 \end{array}$$

- By rounding off to **nearest tens**
- 108737 rounds off 108730,47599 rounds off 47600
- The digit we need to look at to decide the value of tens digit is underlined

$$\begin{array}{r} 108730 \\ -\ 47600 \\ \hline 61130 \end{array}$$

1. 8325 – 491

2. By rounding off to **nearest hundreds**

3. 8325 rounds off 8300,491 rounds off 500

4. The digit we need to look at to decide the value of hundreds digit is underlined

$$\begin{array}{r} 8300 \\ -\ 500 \\ \hline 7800 \end{array}$$

- By rounding off to **nearest tens**
- 83$\underline{2}$5 rounds off 8330,49$\underline{1}$ rounds off 490
- The digit we need to look at to decide the value of tens digit is underlined

$$\begin{array}{r} 8330 \\ -490 \\ \hline 7840 \end{array}$$

1. $4,89,348 - 48,365$
2. By rounding off to **nearest hundreds**
3. 489$\underline{3}$48 rounds off 489300,483$\underline{6}$5 rounds off 48400

$$\begin{array}{r} 489300 \\ -\ 48400 \\ \hline 440900 \end{array}$$

- By rounding off to **nearest tens**
- 48934̲8 rounds off 489350,4836̲5 rounds off 48370

$$\begin{array}{r} 8330 \\ -490 \\ \hline 7840 \end{array}$$